CLAIMS

1. An image processing apparatus comprising:

an integrated image-reading/writing head including a transparent cover, a substrate opposed to and spaced from the transparent cover, a plurality of light receiving elements mounted in a row on the substrate and capable of reading in a main scanning direction an image on a document faced onto the transparent cover whereby outputting line by line read image data containing a first to an n-th pixel data, and a plurality of printing elements mounted in a row generally in parallel to the light receiving elements on the substrate and capable of outputting printing image data onto a recording paper for printing;

a platen roller for the document, facing the transparent cover;

a platen roller for the recording paper, facing the printing elements; and

data processing means capable of creating the printing image data containing a first to a n-th printing pixel data respectively corresponding to the first to the n-th pixel data in the read image data; characterized by

that the light receiving elements and the printing elements are mounted on a same surface of the substrate;

that a feeding direction of the document in a region where the document is faced to the transparent cover and a feeding direction of the recording paper in a region where the recording

paper is faced to the printing elements are the same; and

that the pixel data outputted for the printing are arranged in the order of first to n-th when the printing image data are outputted by the printing elements onto the recording paper for printing.

2. The image processing apparatus according to Claim 1,

wherein the integrated image-reading/writing head is provided with a drive controlling circuit including a shift register serially storing the pixel data contained in the printing image data received from the data processing means in the order of reception and in the direction of the row of printing elements, and selectively driving the printing elements corresponding to contents of the pixel data stored in the shift register, and

wherein an inputting direction of the printing image data to the shift register is opposite to the main scanning direction.

3. The image processing apparatus according to Claim 2,

wherein the drive controlling circuit is constituted by using a plurality of IC chips each incorporating a circuit as a unit of the drive controlling circuit, and

wherein the IC chips being mounted on the surface of the substrate mounted with the light receiving elements and the printing elements.

4. The image processing apparatus according to Claim 2,

wherein the drive controlling circuit incorporates a circuit as a unit of the drive controlling circuit, and

wherein the IC chips also incorporating the light receiving elements.

5. The image processing apparatus according to Claim 2,

wherein the drive controlling circuit is arranged to perform drive control of the printing elements when receiving a strobe signal from the data processing means, and

wherein the light receiving elements being arranged to perform reading of the document only while the strobe signal being outputted from the data processing means.

6. The image processing apparatus according to Claim 1,

wherein the integrated image-reading/writing head is provided with a case fitted with the transparent cover, the case being assembled to the substrate to enclose the light receiving elements, allowing part of the substrate to extend out of the case, and

wherein the printing elements being mounted on the extended part of the substrate.

7. The image processing apparatus according to Claim 1, wherein the surface of the substrate mounted with the light receiving elements and the printing elements is mounted with a light source for illumination of the document.

8. The image processing apparatus according to Claim 1, wherein the printing elements are heating elements.

9. An image processing apparatus comprising:

an integrated image-reading/writing head including a transparent cover, a substrate opposed to and spaced from the transparent cover, a plurality of light receiving elements mounted in a row on the substrate and capable of reading in a main scanning direction an image on a document faced onto the transparent cover whereby outputting line by line read image data containing a first to an n-th pixel data, and a plurality of printing elements mounted in a row generally in parallel to the light receiving elements on the substrate and capable of outputting printing image data onto a recording paper for printing;

a platen roller for the document, facing the transparent cover;

a platen roller for the recording paper, facing the printing elements; and

data processing means capable of creating the printing image data containing a first to a n-th printing pixel data respectively corresponding to the first to the n-th pixel data in the read image data; characterized by

that the light receiving elements and the printing elements are mounted on a same surface of the substrate;

that a feeding direction of the document in a region where the document is faced to the transparent cover and a feeding

direction of the recording paper in a region where the recording paper is faced to the printing elements are opposite to each other; and

that the pixel data outputted for the printing are arranged in the order of n-th to first when the printing image data are outputted by the printing elements onto the recording paper for printing.

10. The image processing apparatus according to Claim 9,

wherein the integrated image-reading/writing head is provided with a drive controlling circuit including a shift register serially storing the pixel data contained in the printing image data received from the data processing means in the order of reception and in the direction of the row of printing elements, and selectively driving the printing elements corresponding to contents of the pixel data stored in the shift register, and

wherein an inputting direction of the printing image data to the shift register is the main scanning direction.

11. The image processing apparatus according to Claim 10,

wherein the drive controlling circuit is constituted by using a plurality of IC chips each incorporating a circuit as a unit of the drive controlling circuit, and

wherein the IC chips being mounted on the surface of the substrate mounted with the light receiving elements and the printing elements.

12. The image processing apparatus according to Claim 10, wherein the drive controlling circuit incorporates a circuit as a unit of the drive controlling circuit, and wherein the IC chips also incorporating the light receiving elements.

13. The image processing apparatus according to Claim 10, wherein the drive controlling circuit is arranged to perform drive control of the printing elements when receiving a strobe signal from the data processing means, and wherein the light receiving elements being arranged to perform reading of the document only while the strobe signal being outputted from the data processing means.

14. The image processing apparatus according to Claim 9, wherein the integrated image-reading/writing head is provided with a case fitted with the transparent cover, the case being assembled to the substrate to enclose the light receiving elements, allowing part of the substrate to extend out of the case, and wherein the printing elements being mounted on the extended part of the substrate.

15. The image processing apparatus according to Claim 9, wherein the surface of the substrate mounted with the light receiving elements and the printing elements is mounted with a light source for illumination of the document.

16. The image processing apparatus according to Claim 9, wherein the printing elements are heating elements.